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ON AN ETHNOGRAPHIC TOPOS IN THE
CLASSICAL LITERATURE
(THE GOLD-DIGGING ANTS)

I

Classical Greek and Roman sources on India attract the readers' attention with the fascinating myth of the gold-digging ants.¹

In its best-known version, and for the first time it is narrated by Herodotos in lib. III c. 94–106.² Later authors³ repeat the story: minor or major differences in their renderings are of great use for discerning the background of the story, for its interpretation.

Herodotos' account:

The description of the economic and tribute-paying units of the Persian Empire provides him a chance to narrate the story. In the Persian Empire divided into twenty *satrapeias* (III, 89) of which the twentieth *nomos* is called *India* (III, 94), the largest tribute — 360 talents of gold-dust — was paid by the Indians, the most populous nation of the then-known world:

Ἰνδῶν δὲ πληθὺς τε πολλῶ πλεῖστον ἔστι πάντων τῶν ἡμεῖς ἴδμεν
ἀνθρώπων καὶ φόρον ἀπαγίνεον (πλεῖστον) πρὸς πάντας τοὺς ἄλλους,
ἐξήκοντα καὶ τριηκόσια τάλαντα ψήγματος: νομὸς εἰκοστὸς οὗτος.

As the Indians were the farthest people known to Herodotos,⁴ from hearsay, about whom not a few peculiar stories were current among the Greeks, partly from the Persians, partly from the Greeks who had already visited India (one of them was Scylax of Caryanda⁵), Herodotos had rightly thought the story about the provenance of that enormous quantity of gold-dust (ψήγμα) worth narrating on the account of its entertainingness. The frame of this story is the description of the Indians (c. 98–101) interwoven with the narration about the camels playing part in the story itself.

The gold (χρυσός) is obtained by Indians living northward from other Indians, in the neighbourhood of the city of Caspatyros and of the land Pactyice. These Indians resemble many ways the Bactrians: they are the most warlike people. In their vicinity there is a sand-desert where "there are ants in size somewhat less indeed than dogs, but larger than foxes",⁶ some

of which are kept in the Persian royal court. These ants while building their subterranean holes heap up the sand mixed with gold (*ἡ δὲ ψάμμος ἡ ἀναφορευμένη ἐστὶ χρυσῆτις* c. 102). This is grabbed by the Indians approaching the area riding camels when the ants are hiding themselves under the ground because of the heat. Even so the ants having excellent smelling discover the enemy and pursue it (*χρῆται γὰρ δ' οἱ μύρμηκες ὁσμῇ, ὥς δὴ λέγεται ὑπὸ Περσέων, μισθόντες διώκονσι* c. 105). They can escape and keep the gold only sacrificing the male camels: while the ants are busy with the camels left behind, the men run away. According to the Persians the Indians obtain the majority of their gold this way, though they have mined gold and also from the rivers.⁷

As if Herodotos was going to verify the story of the gold-digging ants, he speaks about the other miracles of India like large-size animals or wool-bearing trees (c. 106).

It seems that the learned men accompanying Alexander the Great into India were also interested in the story of the gold-digging ants as some fragments speak in the favour of this. Nearchus, for example, states that he had seen the skin of the gold-digging ants.⁸

The works of the authors in Alexander's companionship served only as additional sources in comparison with those who had been as ambassadors in India like Megasthenes and Deimachus whose records were also known to later historians and geographers. cf. Strabo: Geogr. II, 1.9. and XV, 1, 12, etc. Although the work of Megasthenes has survived only in fragments, Schwanbeck's reconstruction and McCrindle's annotated translation give a chance "to study" his account.⁹ Both Strabo's and Arrian's versions of the story of the gold-digging ants go back to Megasthenes.

Strabo introduces his rendering with the following statement: "Both from ignorance and the remoteness of its situation everything about it (India) is exaggerated or represented as marvellous: for instance, the stories of the gold-digging ants, of animals and men of peculiar shapes and possessed of wonderful faculties."¹⁰

Following Megasthenes, Strabo speaks about the people called Der-dai who are living towards east, surrounded by mountains. Below their plateau there are gold-mines worked by ants. These ants are not less in size than mild foxes and subsist on hunting. In winter, like the moles, dig for themselves underground holes: the earth excavated is impregnated with gold that it requires little melting only.

Men of the neighbourhood go to them to grab the gold with pack-animals. To prevent the ants' attack they throw pieces of raw meat around, and when this engages the ants' attention, the men depart. Since melting is unknown to the people, they sell the gold-dust to the traders at any price.¹¹

Following also Megasthenes, Strabo remarks (XV, 1, 69) that "they say that of the gold-digging ants some are winged, and that the Indian rivers, like the Iberians, carry down gold-dust."¹² It may not be insignificant that Strabo, like Herodotos, uses the word *ψήγυξ* both for the ant-gold and alluvial-gold.

Strabo's contemporary Propertius is also acquainted with the story of gold-digging ants but he seems to follow Herodotos or Megasthenes rather than the geographer.¹³ Pliny's account (Nat. Hist. VI, 19; XI, 36, 111) partly follows Herodotos, partly Nearchus and partly Megasthenes. According to him the ants of Dardae's land have horns and look like cats, in size they resemble the Egyptian wolves. They dig the gold in winter, the Indians steal it from them in summer when they are hidden from the heat. They notice the matter after the smell, fly out (*provolant*, cf. Strabo: Geogr. XV, 1, 69) and fiercely attack the men who are running away on their camels in vain: the ants are extremely quick, wild and fond of the gold.¹⁴

Speaking about the procedures of obtaining gold, Pliny (Nat. Hist. XXXIII, 21, 66) mentions the gold dug by the Indian gold-digging ants (*formicae*) and Scythian griffins (*apud Scythas grypes*) as exceptional next to gold carried by the rivers, — in India he mentions the Ganges as an example, from which gold is procured by washing (its name is *talutium*), besides also the gold mined from shafts which after being crushed, washed, fired and ground, is called *scudes*. There is also the gold mined by the light of lamps from *arrugia*-type mines, this gold (*aurum*) when it is in not-yet-processed, row form, is called *palaga*, *palacurna*, *balux*.¹⁵ This account is the more valuable since it shows how many kinds of gold were distinguished by the Romans according to the origin and working up.¹⁶ Pliny's data, already referred, about the horns and skin of the gold-digging ants, combined with those of Strabo, will help in zoological identification of these ants and griffins.

The griffins are more and more mentioned, although in somewhat different context. For example, Pomponius Mela ascribes to ants not smaller than dogs similar to gold-protecting griffins functions.¹⁷

After a long time Dio Chrysostom's version is in a way different from the predecessors'. According to him the ants are in their manners similar to ants of Hellas, but, as with the others, bigger than foxes. The dust heaped up by them contains pure gold dazzling bright which is the object of the aspiration of their neighbours living beyond the desert. For this purpose they are harnessing swift horses to their chariots and approach the ants at midday when they hide themselves because of the heat, collect the gold and run away as fast as they can. The ants as soon as they discover the insult, attack. Since they are the bravest of all the animals, fight until they recover the gold or die. Dio thinks that they are aware of the value of the gold, this is why they sacrifice rather their life than renounce.¹⁸

Arrian's sources were almost identical with those of Strabo, but his interpretation was different. In the *Anabasis* (V, 4, 7) he proudly states: "Concerning this people, I have, in this present work, described neither under what laws they live, nor what strange animals their country produces, nor in what number and variety fish and water-monsters are bred in the Indus, the Hydaspes, the Ganges, and other Indian rivers. Nor have I described the ants which dig up gold for them, nor its guardians the griffins, nor other stories invented rather to amuse than convey a knowledge of facts,

since there was no one to expose the falsehood of any absurd stories told about the Indians."¹⁹

For his *Indica*, written, in Ion dialect, as a supplement to the *Anabasis*, Arrian has chosen Eratosthenes²⁰ (VIII, 1–17) and Nearchus (c. 18–42) as sources, and different authors for the concluding chapter. In the *Indica* with the reservation of his statement quoted above, he writes about the gold-digging ants, too. According to Megasthenes, he asserts, the ants dig gold indeed (*Μεγασθένης . . . ἰστορεῖ . . . εἶναι τοὺς (μύρμηκας) τὸν χρυσὸν ὁρύσσοντας . . .*) but only under the constraint of their instincts, exactly like small ants. Since the earth contains gold (*χρυσῆτις*), the Indians get it. As Megasthenes' information comes from hearsay, Arrian finds needless to go into details.²¹ In the same time his account has two important items: the ants dig their tunnels, holes in the gold-containing soil only to have shelter and not for the gold itself, and that Megasthenes got his information from hearsay.

From amongst the later authors Aelian alone mentions the gold-digging ants who never cross the river (*Περὶ ζώων ἰδιότητος* III, 4).

Philostratus compares Aethiopia with India (deriving the former from the latter), but to the ants he ascribes gold-guarding only in Aethiopia, while in India this is assigned to the griffins.²² It is evident from this passage that the ant-griffin tradition has been split up, and both to the ants and griffins the gold-guarding is allotted alone not the gold-digging.

It is possible to trace next stage in the tradition at Heliodorus who makes the troglodytes among the tribute-payers of the Aethiopian king to present him gold collected by ants and a griffin harnessed with golden snaffle.²³

The last link of the tradition is represented by Isidorus who speaks of dog-shaped ants which do not only dig but guard the gold and pursue to death the grabber — in Aethiopia.²⁴

II

The interpretation of the texts on gold-digging ants is one of old intriguing problems of the research. With some exaggeration Arrian could be regarded as the first interpreter who, at least, did a step for rationalizing the myth.

In the recent study the credit goes to the commentators of Herodotos, and to the eminent Indologists of the 19th century, Ch. Lassen,²⁵ H. H. Wilson²⁶ and above all J. W. McCrindle²⁷ who had already used the results of zoological and geographical research (e. g. of V. Ball,²⁸ Vivien de Saint Martin²⁹ and the young Aurel Stein³⁰ respectively, etc.).

In the description of Herodotos realistic and unrealistic elements are mixed up. The localization of the scene, the characterization of the camels, the execution of the plans are veritable motifs, in the same time the description of the *modus vivendi* of the ants in the desert even though they are compared to the ants of Hellas, is unrealistic. This is most conspicu-

ous in the light of the nearly etologically authentic description of the camels. The problem of the fabulous races should be treated separately.

Localization:

Herodotos, as a matter of fact, does not mention Gandhāra by name when he is speaking about the locality of the gold-dust's provenance (III, 102), yet, it is undoubted that he means Gandhāra when mentions those *other* Indians³¹ northwards from whom the gold-obtaining war-like Indians are living in the neighbourhood of Caspatyros and Pactyice, since it was Gandhāra the farthest place, inhabited by Indians, known to Herodotos. He enumerates it as the seventh satrapeia of the Persian Empire.³² Caspatyros, as it is stated by McCrindle, who has summarized the investigation of the question³³ is identical with Caspapyros of Gandarice mentioned by Hecataeus in fr. 179. This word is the contracted rendering of the Sanskrit Kaśyapapura. McCrindle seems to accept Aurel Stein's opinion³⁴ who thinks that this Kaśyapapura is identical neither with Kabul nor with Kaśmir, therefore it must have been a city unknown so far. In the same time, Pactyice linguistically goes well with the ethnic name *pakhtun* (Indian *pathan*), the language-designating words *pašto/puštu* of Afghanistan are direct descendants of it.³⁵ The area where this ethnic group occurred in the antiquity, undoubtedly Gandhāra, the region of the confluence of the Indus and Kabul rivers. For the territory of gold-digging ants is bordered from south by Gandhāra, from northwest by Bactria, from northeast the Karakoram and the Himālaya; it can be placed with a tolerable accuracy between the 70–80s of the eastern longitude and 35–40s of the northern longitude. This localization – with the necessary corrections – coincides with the region called by Ptolemy Daradrae³⁶ and also with the territory of *derdai* of Strabo (Megasthenes XV, 1. 44), *dardae* of Pliny (XI, 36 (111)), and of course with the present area of Dardistan.³⁷

Herodotos places here a sand-desert and accordingly camels, but Strabo (Megasthenes) thinks of plateau and does not name what kind of pack-animals he means under the hypozygion; Pliny takes no notice of the morphological features, but speaks of camels, while at Dio Chrysostom horses and carts are mentioned and the people acting are separated from the ants by a stripe of desert. Confronting all the above data it comes clear that Herodotos, not having local knowledge, has thought of a continuous desert from Bactria down to the Indus delta, not without any reason: he has thought India to be the margin of the oikumene (III, 98). To attribute camels to the neighbours of the Bactrians, i. e. to the Dards was but natural and it gave a chance to the writer to give a colourful account of the camels. For Herodotos' mind the gold-digging ants are building their subterranean holes and tunnels like other ants but they are smaller in size than dogs and bigger than foxes. This motif is repeated by almost all the authors involved. In the interpretation of these animals the greatest problem was caused by the simultaneous stressing of the ant-nature and the size comparable to dog-fox-wolf. The question was further complicated by the informations derived from Nearchus that this peculiar animal had

stripable skin and horns, and some of the animals were kept in the Persian court.

For a long time the research has taken granted that Herodotos on myrmeces meant some hole-dwelling animal, e. g. marmot.³⁸ In 1884 V. Ball read his lecture on the identification of the animals and plants of India mentioned by Greek authors, and in his paper³⁹ he completes the results achieved by Sir H. Rawlinson and F. Schiær independently of each other regarding the gold-digging ants. Ball thinks that opinion of the afore-said scholars, according to which the myrmeces were not ants but Tibetan miners, can be complemented with the following observations: a. the miners were accompanied with ferocious dogs which were guarding their mines and tents — this is why the griffins of the classical authors are gold-guarding because they, the griffins, are identifiable with Tibetan mastiffs;⁴⁰ b. the miraculous object in the temple of Hercules at Erythrae could be regarded as the gold-miners' pickaxes consisting of horns of wild sheep mounted on handles.⁴¹

Ball refers to an important point, namely, that the problem of the gold produced by the ants was solved by H. H. Wilson⁴² (without proceeding in the zoological identification of the ants) who had found the word *pipilika* 'ant-gold' in the Mahābhārata (III, 1860).⁴³ This word designates the gold dug by ants, and is etymologically connected with the words *pipilā-*, *pipilika-*, *pipilaka-* 'ant', different kinds of ants. (More on the *pipilika*-problem see below.)

If all, Ball, H. Rawlinson, Schiær were right, the whole problem of the ant-gold looked superficial which had been raised by contaminating the peculiar customs of the Tibetan gold-miners and misinterpretation of the Sanskrit word 'ant-gold'. McCrindle tends to accept this. However, there are serious counter-arguments.

May the analogy be any suggestive between the custom of the Tibetan gold-miners and the gold-digging ants, it is anachronistic to speak about Tibetans in the first millennium B. C. when the beginnings of the Tibetan history could be related to the 6th–7th centuries A. D. Another objection against Tibetans of this context is that — as it was shown above — the people of the auriferous regions are not named at Strabo (*Δέρδι*) and Pliny (*Dardae*) alone, but the data of Herodotos and the *Δάρδαροι* of Ptolemy (Geogr. 42) stand for them, too. The *darada* folk of the Sanskrit literature, often mentioned in the Mahābhārata, in the Manavadharmaśāstram or in the Rājatarāṅgiṇī (with *Pāṇini* (IV, 3, 93) Darad is the name of a country), lives now on the territories adjoining Tibet but at one time their habitation area covered a part of the present Tibet.⁴⁴ The Indian sources place them already in the first millennium B. C. to the same territories they occupy now, and it is likely that the Persians also knew of them as living in Bactrian vicinity. It is due to their intermediate position between the most northerly contacts of the Iranians and Indians that they could preserve their ethnolinguistic identity. They must have occupied that territory very early, latest around the middle of the second millennium B. C., in the time of the major Indo-Iranian migrations. Later the Tibetan

movements could have played a part in their territorial withdrawal. Their successors have presumably taken over a lot of elements of economic structure, of mode of life (the linguistic influence has been proved), therefore it is possible that in the area of the upper course of the Indus the custom and way of gold-mining was also transmitted. It is probable that the story of the gold-digging ants has been borrowed there into the Tibetan folklore. The Tibetan version at one point strongly differs from that related in classical literature, namely the ants do not dig gold but hanging on a thread they bring it up from the depth of a lake.⁴⁵

Besides that logical absurdity that ants are identical both with Tibetan miners and their dogs, there is one more possibility for rejecting the current interpretation, and this is the zoological determination of the ants. For the following passage I am indebted to Prof. Z. Kádár.

„H. Stein in his commentary to Herod. III, 102 identifies the Indian myrmeces with the marmot. In this case we could think of the bobak (*Marmota bobak* P. L. S. Müll.) which is a rodent indigenous in Central-Asia up to the Amur-region and it is living in subterranean cases indeed.⁴⁶ Although the species is the biggest of the marmots, the bobak is much smaller in size than the fox and its stubby build does not remind of the ants. It works against this idea the fact, that the marmot was known in the antiquity. Cf. Nat. Hist. VIII, 55 (132): “*Conduntur et Alpini quibus magnitudo melius est, sed hi pabulo ante in specus convecto.*”⁴⁷

Recent commentators, like How and Wells, and Gil Fernandez⁴⁸ propound the possibility that the classical texts in question refer to the long-tailed pangolin, the scaly ant-eater. This is a real possibility, supportable by zoogeographic, morphological and ethological data. The pangolin (*Manis pentadactyla* Z.) is native of East India and South China. Its abode is in the deserts and woodlands both in hilly areas and lowlands. It is much bigger than the marmot, its entire length is about 1,3 m. The pangolin's elongated body, extremely long tail are covered with scales resembling tiles of a roof. The scales are corneous, rugged and stiff. The pangolin's legs end in long spade-nails. This animal subsist on ants and termites. It is very fleet of foot, but when attacked, stops for a while resting on the tail and hind quarters, and looks around. The pangolin is sleeping in day time, awakening at nightfall and then sets out for hunting, in which it is helped by the excellent scent, sense of smelling. The scales are thought to have healing property hence magic power as well, on account of which they are used for making amulets, fancy articles and even in powdered form are medicinally used, being supposed to possess aphrodisiac properties.⁴⁹

This animal — says Sir W. Elliot — digs holes for himself in depth of 2–4 metres in tunnel plantwise directed downwards which leads to a pit of 0.5 meter in diameter. The pangolin works very carefully, only some surface disorder show where they are.”⁵⁰

No doubt, the scaly ant-eater corresponds to the gold-digging ant except for being connected with the gold. In this respect even a philological examination of the words denoting pangolin does not throw light on such

a contact.⁵¹ What may be significant is that the scaly ant-eater is one of the *gotra*-name givers, cf. DED 1770.

As long as no new data emerge it is safe to say that if there is any real creature behind the gold-digging ant, it is the pangolin. An account of its ant-eating was interpolated into the indigenous Indian myth of the *pīpīlikas*, which has found its way into the classical Greek texts via Persian transmittance at Herodotos, together with the knowledge of the ant-eater or camels, etc. The compilation was either of the informant of Herodotos, or more likely of Herodotos himself.

In the favour of the former might be taken that the story is repeated in its main lines by Megasthenes also, who had taken his information from indigenous sources (see below). However, it is not impossible that Megasthenes had used Herodotos also and augmented his informations with new ones gathered from learned Indians.

III

It remains an intriguing question the problem of the *pīpīlikas*. The simplest explanation to clear up the ant-ant-gold relationship is offered by taking into the consideration the form of the alluvial gold which is granulous and the shape of the ants. If it were only this much behind the myth, the Sanskrit and Classical versions could be regarded as aitiological myths which developed into different renderings in India, in Iran and in Tibet and in the classical Antiquity.

Be it as it may, the practice of naming the gold in India after its quality, form or provenance (like in Latin and Chinese languages) has to be examined.

Both in the Indo-Aryan and Dravidian languages of India there are many words denoting the different kinds of gold. Let us examine the commonest of them, which do not signify ornaments alone.

Hiranya: it seems to be the oldest general term for gold which in the same sense was already used in the Indo-Iranian period, cf. Av. *zaranya*-, OP. *daraniya*-, Sogd. *zyrn*-, etc.⁵² and it had been borrowed with the same meaning into the Finno-Ugric languages. The word goes back to an IE **ǵhel*- ('gelblich, grün') which is also preserved in other Sanskrit words like *hari* 'tawney, yellow, reddish brown, green', *harit* id., *hiri*- (in compounds: 'yellow, golden').⁵³ The noun *hiranya* 'gold' was formed with the suffix *-n*- (EWA III, 599). The word *hiranya* belongs to the class of words which at least etymologically, are connected with the feature (colour) of the gold. To the same group may belong the words *suvarṇa*, *kāñcana*, *kanaka*.

Suvarṇa: The MIA and NIA developments of the word connect it with the 'gold'. The original meaning is preserved in Pkt. *suvaṇṇa* 'of good colour'. Although the EWA (III, 566-67, 564) connects it with *svah*- (*svar*-, *sv*-) n., this is not very convincing for the later developments and phonetic form of the word. The CDIAL takes it as a compound of *su*-² (prefix with the meaning 'goodness') and *varṇa*-¹ m. 'appearance, colour, class'. This type of the compounds is very common in the Sanskrit. In the

Rgveda (X, 68, 3) it is used in the original meaning 'schönfarbig', being the attribute for the noun *go* f. Of the New-Indo-Aryan languages the Hindi has the word *sonā* for the gold⁵⁴ which had been developed in the way Skt. *suvarṇa* > Pa. *sōvaṇṇa* > Pkt. *sō(v)añña* > Ap. *sōvana* > Hindī, etc. *sōnā*. Here again, the metal was named auspiciously after its colour. Behind this usage it is not improbable to assume a peculiar value to the gold.

kāñcanam (-ah 'Gold, Geld, Reichtum') 'gold money, wealth' is related to the IE **ǵnǵenō* (Greek *ζνηζός, ζνzzός* 'gelblich' — EWA I. 195) and is a result of the same way of thinking as in the case of the previous example. The word's possible Dravidian contacts are worth of consideration.

The word *kanaka* (*kanala, kandalā*) 'gold' is a Dravidian word borrowed into the Sanskrit and possibly has something to do with the attribute 'redhot'.⁵⁵ The other group of gold-denoting Sanskrit words consists of those which, although originally meant only a piece of gold, denoted a money/coin or a unit of measurement, like *karṣa*, *kārṣāpana*, *pana*, *niṣka*.

Karṣa: EWA II. 176: "ein best. Gewicht / a certain weight, wahrscheinlich (mit ap. *karṣa*- ein Gewicht) aus einer westlichen (aram. ?) Quelle..." But *Monier-Williams* derives it from the root *krṣ-* 'the act of drawing, dragging, ploughing, agriculture' and states, that its meaning is 'weight

of gold, or silver' ($= 16 \text{ Māshas} = 80 \text{ Rettis} = \frac{1}{4} \text{ Pala} = \frac{1}{400}$ of a Tula =

about 176 grains troy; in common use 8 Rettis are given to the Masha, and the *Karṣa* is then about 280 grains troy).⁵⁶ The CDIAL 2905–2909 examines the derivatives of *krṣ-* but no weight-unit is given. According to the *Brhat Hindī Koś* (263) "16 *māṣekā mān* (5 *rattike māṣese*); *purāṇe zamāne-kā ek sikkā, hūna...*"

The DED 1200 Ta. *kācu* 'gold, gold coin, money, a small copper coin, etc.' seems to be connected to *karṣa*, to which see also EWA I, 177. From all these data one can infer that *karṣa* was originally used as a weighing unit for precious metals and later this given piece of gold, silver, copper of determined weight served as coin.⁵⁷ The meanings 'gold, coin' and alike are secondary. Originally the *karṣa* denoted a piece of metal splitted according to given weight: the verbal form (part. perf. P) was showing the process of producing the money or weight-unit. This method of making coins might have come from the west or from conquerors. The later meaning 'gold' had hidden the etymological meaning in this process.

The word *kārṣāpana* is a compound, "weighing a *karṣa*", coin or weight of different values; if gold = 16 *māṣa*.⁵⁸ There are quite a few systems with different ratios in use what shows that originally it was a unit indifferent from any metal, equivalent to some natural substance: bean, kauri, etc.⁵⁹

The oldest member of this class of words (denoting gold) is possibly the *niṣka*. It appears in the RV where its meaning is necklace, neck-ornament. It seems, the beads of the necklace has been standardized in a weight equal to 4 *suvarṇas*.⁶⁰ The word's etymology is not clear, it may come from the Semitic languages, perhaps already from the Akkadian. Perhaps originally it denoted selected (? alluvial) grains of gold which were equally good for ornament and currency.⁶¹

It is surprising, how many words are current for the gold in the Dravidian languages. Grouping these words, it comes out that the good many of them are of the *hiranya* – *suvarṇa* type, i. e. denoting some quality of the gold (DED 130, 296, 1183, 1607, 2442, 31661, 3717, 3965), and the rest marks gold in some form (ornament, coin: wealth) treasurable up (DED 1200, 1210, 1435, 1944, 1948, 2136, 2282, 2442, 3732, 3780, 4487).

Examining, lastly, the *pipilika*, it is interesting to note that the word is a non-Aryan one (EWA II, 284 – 285). This must be responsible for the variants all denoting 'ant', all of which appear in compounds (CDIAL 8201). In Hindi the word *ciṇṭā* (*ciṇṭā*) is the synonym for it, but when it is about ant-gold: "*ek prakārka sonā, yah ciṇṭonkā ekatra kiya huā mānā jāta hai*".⁶²

In the Indian literature there is no clear indication, how the ant gold was collected by the ants, except for the *Mahābhārata* (II, 1859) where the word *uddhṛta* refers only to bringing out or raising up the gold. This does not help to construct an etymology.⁶³ What is left, the shape of the gold and ant common. In this relation it may be of some interest that the words denoting the seeds, grains of the *Ficus Religiosa* and *Piper longum* (*pippala*, *pippali*) (EWA II, 285, CDIAL 8205) closely resemble the *pipila*, and are of non-Aryan origin.

Be it as it may the *pipilika* designates a kind of gold consisting of small grains, sometimes even dust since it is – in the Sanskrit version – measurable in *droṇa*.

For this, the word belongs to the special class of gold-meaning words which stand for the alluvial or wash-gold. These words are *pipilika*, *niṣka*, and perhaps the Tamil *carappani*. The latter, although its meaning is 'gold neckchain inlaid with diamonds' (DED 1948), may throw some light on the existence of the *niṣka*-type ornament in the Dravidian. On the ground of linguistic rules ($s > h > 0^{64}$) the DED item 176 Ta. *ari* (*-pp-*, *-tt-*) 'to sift, separate larger from smaller bodies, separate by washing...'; Ma. *arippu* 'sifting, goldwash' (common for many Dravidian languages) may perhaps be connected to the DED 1948. If this inference is right – the *carappani*, *carappali*, *sarapali* etc was originally a chain manufactured from selected pieces of alluvial gold.

This kind of gold seems to have played a part in the early Mesopotamian trade, and it has originated from the country *Harali*/*Arali*. G. Komoróczy⁶⁵ has given wellfound arguments to prove that *Harali*/*Arali* = *Arallū* which was a 'Golden country', the farthest country north-eastwards known to the Sumerians. If the *Meluḫḫa* country of the Sumerian texts is identical (and that is hardly questionable) with the Indus Valley civilization, *Harali* has to be placed somewhere north of that, i. e. roughly into the area inhabited later by the Dards. And from that country the Sumerians got – according to the word-list *HAR* (*ur₅*)-ra = *hubullu* – a special kind of gold, which is interpreted by von Soden as 'collected' (*guškin-a-ra-li* = *liqtu*).⁶⁶

From all the above a picture emerges: In the territory of Dardistan from very ancient times – probably from the 3rd millennium B. C. – people

practiced goldwashing. They got the pure, granoulous alluvial gold in large quantity, and exported it into different countries from Sumer to India. The gold was of good quality, pure, required little melting, therefore the inhabitants of Dardistan took the risk of procuring it.

The myth woven around this gold was created either from some unknown aetiological reason or simply to keep off the unwanted adventurers, traders. This myth, like the practice of the gold-washing in that area, was handed down from generation to generation, from the Prae-Indo-Iranians to the Indo-Iranians and Tibetans. Here and there it has been incorporated into the native folklore through which it has found its way into the written literature as well.

It is probable, that Herodotos has got the story in Persia, Megasthenes in India. Later writers followed one or both of them. To separate the items going back to different archetypes is possible only with a close and joint analysis of the Mahābhārata, especially the Sabhāparva, and the classical accounts, but this will be the subject of a further study.

¹ In the ethnological literature the story of the gold-digging ants is not considered to be a separate fable or myth, therefore it is not included in the catalogues, but it is taken as motif or episode, cf. S. Thompson: Motif-Index of Folk-Literature, I. A—C. Copenhagen 1955. p. 474: B 756 Gold-digging ants: *Chauvin VII, 87, No. 373bis; **F. Schiern: Ueber den Ursprung der Sage von den goldgrabenden Ameisen. Copenhagen — Leipzig 1873. My thanks for this information are due to dr. I. Katona. — A paper by Gy. Karsai, read in a public lecture and published in this volume, pp. 61—72, has been the immediate reason for writing this article.

² Herodotos: Istoría, Ed. H. Stein, Berlin 1889—1902, Lib. III, in vol. II, 1893.

³ For the list of the *auctores* see J. W. McCrindle: Ancient India as Described by Megasthenes and Arrian. Calcutta—Bombay — London 1877. 96.

⁴ τοῦτο μὲν γὰρ πρὸς τὴν ἡὼ ἐσχάτη τῶν οἰκισμένων ἡ Ἰνδική ἐστι ... Herod. III, 106.

⁵ Cf. Herod. IV, 44.

⁶ ἐν δὲ τῇ ἐρημίᾳ ταύτῃ καὶ τῇ ψάμμῳ γίνονται μύρμηκες μεγάλῃ ἀφ' ὧν μὲν ἐλάσσονα, ἀλωπέκων δὲ μέζονα. III, 102. Translation from McCrindle's: Ancient India as Described in Classical Literature. Westminster 1901. 3.

⁷ τὸν μὲν δὲ πλεῖον τοῦ χρυσοῦ οὕτω οἱ Ἰνδοὶ κτῶνται, ὥς Πέρσαι φασί: ἄλλος δὲ σπανιώτερός ἐστι ἐν τῇ χώρῃ ὀροσσοῦμενος — c. 105. Also: ... τοῦτο δὲ χρυσὸς ἀπλετοῦς ἀντόθι ἐστὶ, ὁ μὲν ὀροσσοῦμενος, ὁ δὲ καταφορέμενος ὑπὸ ποταμῶν, ὁ δὲ ὥσπερ ἐσθήμην ἀρπαζόμενος — c. 106.

⁸ Strabo: Geogr. XV, 1. 44. Plinius: Naturalis Historia XI, 36 (111): "Indicae formicae cornua Erythris in aede Herculis fixa miraculo fuere ... ipsis color felium, magnitudo Aegyptii luporum" (Pliny: Natural History. Loeb Classical Library, vol. III, 1967) — Pliny's information is likely to come from the same source: Nearchus. Arrian speaks about Nearchus as if he had seen the ant-skins taken into the Macedonian camp but not the ants themselves: ἐπεὶ καὶ ὑπὲρ τῶν μυρμηκῶν λέγει Νέαρχος μύρμηκα μὲν αὐτὸς οὐκ ἰδεῖν, ὅποιον δὲ τινα μετεξέτεροι διέγραψαν γίνεσθαι ἐν τῇ Ἰνδῶν γῇ, δορὰς δὲ καὶ τούτων ἰδεῖν πολλὰς ἐξ τῶ σπορὰς κατακομίσθαις τὸ Μακεδονικόν. Arr.: Ind. (VIII) 15, 4. (Arrian: History of Alexander and India. Loeb Classical Library, 1958.)

⁹ Megasthenis Indika. Ed. Dr. Schwanbeck. Bonn 1846. J. W. McCrindle: Ancient India as Described by Megasthenes and Arrian being a translation of the fragments of the Indika of Megasthenes collected by Dr. Schwanbeck, and the first part of the Indika of Arrian. Calcutta — Bombay — London 1877.

¹⁰ Strabo: Geogr. XV, 1, 37 and also II, 1, 9 (The Geography of Strabo, I – VIII. Loeb Classical Library, vol. VII. 1961³).

¹¹ Strabo: Geogr. XV, 1, 44. ... *περισπασθέντων δ' ἀναιροῦνται τὸ ψῆγμα καὶ τοῦ τυγόντος τοῖς ἐμποροῖς ἀργὸν διατίθενται, χωνεύειν οὐκ εἰδότες*. For the different renderings of the passage see McCrindle's Megasthenes 96 n. 1.

¹² After Megasthenes both Strabo (XV, 1, 36) and Arrian (VIII, 10, 5) localizes Pali(m)-bothra, the capital of Sandrakottos to the confluence of the Ganges and the Erannoboas. The latter is identical with the affluent of the Ganges called Son which had changed its bed in 1379 and these days joins the Ganges above Patna (see McCrindle; Megasthenes 208). The Greek name of the river is explained by McCrindle (Ancient India 42–43) as coming from the Sanskrit *hiranyavāha* 'bearing gold' or *hiranyabāhu* 'golden-armed', all the more as both names designate the river Son simultaneously called also *Ṣoṇa* 'red, crimson, purple'. Because of the NIA development of that word the river's present name implies 'gold' but that is merely due to the coincidence of the two words: Son – *ṣoṇa* (see Turner, CDIAL 12624) and *son*, *sonā* < *suvarṇa* (CDIAL 13519, also *Kālikā Prasād* – *Rājvallabha Sahāya* – *Mukundālā Srivāstav*: Brhat Hindi Kōś. Vārāṇasī 1964³, p. 1562.) In the same time there is a small river, a branch of the Gaya river, called *Sona*, and it is thought by McCrindle (J. W. McCrindle: Ancient India as Described by Ptolemy. Calcutta – Bombay – London 1885. 98–99) to be identical with *Sonus* mentioned by Pliny (Nat. Hist. VI, 21¹ (9) – 22 (1)). Against this identification speaks the fact that the 19 tributaries of the Ganges enumerated by Pliny all are navigable whilst the *Gayā* is not, hence it is not mentioned either. *Sonus*, like Ptolemy's *Soa* must be the same as *Erannoboas* = *Hiranyavāha* – *Ṣoṇa* taken as two different rivers on account of the different names.

¹³ Sex. Propertii Elegiae. Recensuit et praefatus est L. Mueller. Lipsiae 1885. Liber IV, el. XII (XIII): "*Quaeritis, unde avidis nox sit pretiosa puellis,*

Et Venere exhaustae damna querantur opes.

Certa quidem tantis causa et manifesta ruinis:

Luxuriae nimium libera facta viast.

Inda cavis aurum mittit formica metallis

Et venūt e rubro concha Erycina salo,

Et Tyros ostrinos praebet Cadmea colores,

Cinnamon et multi pastor odoris Arabs."

¹⁴ Plin.: Nat. Hist. XI, 36 (111): "*Indicae formicae cornua Erythris in aede Herculis fixa miraculo fuisse. aurum hae cavernis egerunt cum terra, in regione septentrionalium Indorum qui Dardae vocantur. ipsis color felium, magnitudo Aegypti luporum. erutum hoc ab iis tempore hiberno Indi furantur aestivo fervore, conditis propter vaporem in cuniculos formicis, quae tamen odore sollicitatae provolant crebroque lacerant quamvis praevelocibus camelis fugientes: tanta pernicitas feritasque est cum auri.*"

¹⁵ Plin.: Nat. Hist. XXXIII, 21 (66) – 22 (79) = (Pliny: Natural History. Loeb Classical Library, Books XXXIII – XXXV in vol. IX, 1968³).

¹⁶ A somewhat remote parallel could be associated from B. Laufer's Sino-Iranica. Chinese Contributions to the History of Civilization in Ancient Iran. With Special References to the History of Cultivated Plants and Products. Field Museum of Natural History, Publ. 201. Anthropological Series, vol. xv, no. 3. Chicago 1919. The author in the part "Iranian minerals, metals and precious stones" (503–529) mentions the five kinds of gold known in China: tse-mo kin 'gold from Persia'; the dark gold of the eastern regions; the red gold of Lin-yi; the gold of the Si-žuñ, and the gold of Čan-č'en (Camboja) – classified after the provenance and quality or look.

¹⁷ Pomponii Melae De situ orbis libri III. Ad optimas editiones collati cum indice locupletissimo. Viennae 1807. Lib. III, c. VII, 2: "*Alit formicas non minus maximas canibus; quas more Gryphorum aurum penitus egestum cum summa pernicie attingentium custodire commemorant...*"

¹⁸ Dion Chrysostomos: Or. 35 (Dio Chrysostom. Loeb Classical Library I – V, vol. III, 1961). ... *τὸ δὲ χρυσίον λαμβάνουσι παρὰ μυρμήκων, οὗτοι δὲ εἰσιν ἀλωπέκων μείζονες, τὰλλα δὲ ὅμοιοι τοῖς παρ' ἡμῖν ... ἀλκιμώτατοι γὰρ εἰσι θηρίων ἀπάντων. ὥστε οὗτοι γε ἐπίστανται τὸ χρυσίον ὁλόγον ἐστὶν ἄξιον, καὶ οὐδὲ προέονται πρότερον ἢ ἀποθανεῖν.*

¹⁹ Translation from J. W. McCrindle: Ancient India as Described by Arrian, Q. Curtius, Diodoros, Plutarch and Justin in the Invasion of India by Alexander the Great. Westminster

1896². 85. The Greek text: *Arrian: History of Alexander and Indica I—II*. Loeb Classical Library 1958³. Lib. V, c. 4, 3: ὑπὲρ ὧν (τῶν τὴν γῆν Ἰνδῶν) ἐγὼ οὕτε οἰστισι νόμοις διαχωρῶνται ἐν τῇδε τῇ συγγραφῇ ἀνέγραψα, οὕτε ζῶα εἰ δὴ τινα ἄτοπα ἢ χώρα αὐτοῖς ἐκφέρει, οὕτε ἰχθύας ἢ κήτη ὅσα ἢ οἷα ὁ Ἰνδὸς ἢ ὁ Ὑδάσπης ἢ ὁ Γάγγης ἢ ἄλλοι Ἰνδῶν ποταμοὶ φέρουσιν οὐδὲ τοὺς μύρμηκας τοὺς τὸν χονρόν σφισιν ἐργαζομένους, οὐδὲ τοὺς γρύπας τοὺς φύλακας, οὐδὲ ὅσα ἄλλα ἐφ' ἡδονῇ μᾶλλον τι πεποιθῆται ἢ ἐξ ἀφήρησιν τῶν ὄντων, ὥς τὰ γε κατ' Ἰνδους ὅσα ἂν ἄτοπα ψεύσονται, οὐκ ἐξελεγχθήσονται πρὸς οὐδὰμῶν.

²⁰ Eratosthenes' account really relied upon Megasthenes, cf. *McCrimdley: Megasthenes* 21.

²¹ Arr. Ind. (VIII) 15, 7: Ἀλλὰ Μεγασθένης τε ἀκοὴν ἀπηγέεται, καὶ ἐγὼ οὐκ οὐδὲν τοῦτον ἀπρεκτέστερον ἀναγοῖμαι ἐγὼ, ἀπὸ τῆς ἐκ τῶν ὑπὲρ τῶν μυρμηκῶν λόγον.

²² Philostratus: *The Life of Apollonius*. Loeb Classical Library I—II. 1960². VI, 1: γρύπες δὲ Ἰνδῶν καὶ μύρμηκες Αἰθίοπων, εἰ καὶ ἀνόμοιοι τὴν ἰδέαν εἰσίν, ἀλλ' ὁμοία γε, ὥς φασί, βούλονται, χρυσοῦ γὰρ φύλακες ἐν ἐκαστέρῳ ἔδονται, τὸ χρυσόγεων τῶν ἡπείρων ἀσπάζονται.

²³ Heliodoros: *Aethiopiaca* X, 26. It may be worth of consideration the name of the Aethiopian king, Hydaspes, an exact counterpart of the Indian river Hydaspes, a tributary of the Indus.

²⁴ Isidori Hispalensis Episcopi Etymologiarum sive Originum. Recognovit brevique adnotatione critica instruxit W. M. Lindsay. Oxford Classical Texts 1911, repr. 1962. XII, 3, § 9: „Dicuntur in Aethiopia esse formicae ad formam canis quae arenas aureas pedibus erunt quas custodiunt nequis auferat captantque ad necem persequuntur.”

²⁵ Ch. Lassen: *Indische Altertumskunde*, I—IV. Bonn—Leipzig 1847—1861.

²⁶ H. H. Wilson: *Ariana Antiqua; a Descriptive Account of the Antiquities and Coins of Afghanistan*. London 1841.

²⁷ See notes 3, 6, 12, 19 and also J. W. McCrimdley: *The Commerce and Navigation of the Erythraean Sea*. Calcutta 1879; *idem: Ancient India as Described by Ktesias the Knidian*. Calcutta 1882.

²⁸ V. Ball: *On the Identification of the Animals and Plants of India which were Known to Early Greek Authors*. Proceedings of the Royal Irish Academy 1885, 302—346; *idem: On Some Brass Castings of Indian Manufacture*. Proceedings of the Royal Irish Academy 1884, 273—278.

²⁹ V. de Saint-Martin: *Étude sur la géographie Grecque et Latine de l'Inde, et en particulier sur l'Inde de Ptolémée, dans ses rapports avec la géographie Sanskrite*. Mémoires de l'Académie des Inscriptions Savants étrangers, V. Paris 1858; *idem: Mémoire analytique sur la carte de l'Asie Centrale et de l'Inde*. Paris 1859; *idem: Étude sur la géographie et les populations primitives du Nord-Ouest de l'Inde d'après les hymnes védiques précédée d'un aperçu de l'état actuel des études sur l'Inde ancienne*. Paris 1860.

³⁰ M. A. Stein: *Memoir on Maps Illustrating the Ancient Geography of Kashmir*. Lahore 1899.

³¹ However, in H. Stein's edition this reference is omitted: Herod. III, 102: Ἄλλοι δὲ τῶν Ἰνδῶν Κασπατῦρος τε πόλις καὶ τῇ Πακτυκῇ γῶνι εἰσὶ πρόσονροι, πρὸς ἄρκτον τε καὶ βορρῶ ἀνέμων κατοικημένοι (τῶν ἄλλων Ἰνδῶν), οἱ Βακτριῶσι παραπλησίην ἔχουσι δαίταν. But McCrimdley translates as follows: "There are other Indians bordering on the city of Kaspatyros and the country Pactyice, settled northward of other Indians, whose mode of life resembles that of Bactrians." McCrimdley: *Ancient India* 2. The ominous passage is not omitted either from C. Hude's Herodotos volume, Oxford 1926. The problem of textual criticism seems to be unsettled, but the localization of Herodotos' gold-digging ants speaks in favour of McCrimdley's and Hude's interpretation.

³² In Herod. III, 91. Gandhāra (Γανδάριοι) figures among places of which some are not definitely localized, or only conditionally identified, but fixed westward from the Indus, forming the 7th nomos (cf. Herod. ed. H. Stein. Vol. II, p. 106), R. Ghirshman: *L'Iran des origines à l'Islam*. Paris 1976², 140, in contrast with I. Hahn, in *ÖKtCh* (= Chrestomathy for Ancient Oriental History. Budapest 1965) p. 324, n. 7, where the seventh nomos is identified with Panjāb. That Gandhāra was incorporated into the 7th nomos was induced by the fact that it was annexed much before the Indus area, which became the 20th nomos afterwards. Cf. § 6 of the Behistun inscription of Darius, where Gadhāra is mentioned in order of the countries Bactria (Bāxtris), Sogdiane (Suguda), Sakasthana (Saka), Sattagydia (Θαταγυς), Arachosia (Harauatis), Makrān (Maka), but on the inscription from Naqš-e Rostam Sind

is mentioned next to Gandhāra (§3 ... *Gadāra, Hinduš...*), like on the Daiva-inscription of Xerxes.

³³ *McCrindle*: Ancient India. Amsterdam, repr. 1971. 2 ff.

³⁴ In his Ancient India as Described in the Classical Literature. In his Ancient India as Described by Ptolemy he could not take yet *A. Stein's* view into account. *M. A. Stein: op. cit.*; *Ch. Lassen: op. cit.* I, 142; II, 631.

³⁵ The eastern, Peshwari, dialect calls the language of Afghans *parto*, while the literary dialect of Kandahar names it *pašto*. See *I. M. Oransky: Иранские языки*. Moscow 1963. 123.

³⁶ *McCrindle*: Ptolemy 105, and also Ptolemy's map of India.

³⁷ *D. I. Edelman: Дардские языки*. Moscow 1965. 7 ff.; for the spread of the Dardic languages see also the Атлас народов мира. Moscow 1964. 60–61.

³⁸ It is accepted by *H. Stein* also, who is following *Ch. Lassen's* Indische Altertumskunde I, 849 ff.

³⁹ See note 28.

⁴⁰ *Ball*, Identification... 303, 312–313. According to *Ball* the description of the gryphon at Ctesias as related by Photios (Ecloga in Photii, Bibl. LXII) is a match for the Tibetan mastiff. Those are used by the miners to guard their camps in winter and are famous for their ferocity... Aelian speaks of similar animals, and the dogs in the possession of the Babylonian satrap Tritantaechmes (Herod. I, 192) must have been of the same sort. One more item could be added, namely Herod. VII, 182, where there are mentioned Indian dogs in possession of Xerxes sailing to Sepias and Thermopylae. This seems to be congruent with Herod. III, 102: "Some of them (the ants) are in possession of the king of the Persians, which were taken there." The verbal coincidence is no proof anyhow, all the less since the ants cannot be miners and dogs in one.

⁴¹ *Ball*: Identification... 303–304. *McCrindle* accepts *Ball's* opinion: *McCrindle: Ancient India* 44 f., *idem: The Invasion of India* 341 f. See also: The Periplus of the Erythraean Sea, Travel and Trade in the Indian Ocean by a Merchant of the First Century. Transl. *W. H. Schoff*. New York 1912, Oriental Reprint New Delhi 1974. 258–259.

⁴² See note 26.

⁴³ *Śrīmābhāratam*. The Mahābhārata, an Epic Poem Written by the Celebrated Veda Vyāsa Rishi. Vol. I, containing Part I, The Ādi Parva; Part II, The Sabhā Parva; Part III, The Vana Parva. Edited by Learned Pandits attached to the Establishment of the Education Committee. Calcutta 1834. II. (Sabhāparva) 1859–1860:

*Tadevai pipīlikam nāma uddhṛtam yat pipīlikaiḥ
Jātarūpam droṇameyamahārṣuḥ pūñjaśo nṛpāḥ*

In *Manmatha Nath Dutt's* translation (A Prose English Translation of the Mahābhārata. Calcutta 1895): "... (The kings) ... brought as tribute heaps of gold measured in Dronas (jars) and raised from underneath the earth by ants, and therefore called after the ants." Sabhāparva, Chapt. LII (Dyuta parva) 4. Cf. the Russian translation of the Mahābhārata: Махабхарата. Книга вторая: Сабхапарва или книга собрания. Пер. с санскрита и комм. В. И. Калянова. Moscow–Leningrad 1962. 97: "... те цари доставили грудями золото, измеряемое сосудах дроны, принесенное им в виде дара муравьями и поэтому называемое муравьиным."

⁴⁴ *D. I. Edelman: Дардские языки* 8 ff.

⁴⁵ *W. F. O'Connor: Folk Tales of Tibet*. London 1906. Hungarian translation by *A. Róna-Tas* in *A Sárkánykirály palotája*. Budapest 1967.

⁴⁶ See *A. Brehm's* description in his vol. on the mammals.

⁴⁷ „Die Beschreibung passt auf das Alpenmurmeltier, *Arctomys marmota* Schreib. = *Marmota marmota*." *H. Leitner: Zoologische Terminologie beim älteren Plinius*. Hildesheim 1972. 175.

⁴⁸ *L. Gil Fernandez: Nombres de Insectos en Griego Antiguo*. Madrid 1959. 59.

⁴⁹ *Ball*, Identification... 321.

⁵⁰ *Brehm's* Mammals.

⁵¹ Out of the pangolin's Indian names offered by *Brehm* – *bayar kit* (*bajar-kit* at *Ball*), *sillu*, *salsalu*, *Kassoli-manjur*, *alangu*, *bun rohu*, *phatagen*, *kaballa*, *kaballaya* – only a few seem to be identifiable: the *alangu* must represent the Tamil *aruṅku*, *aluṅku*, *ṇaluṅku* 'pangolin, Indian scaly ant-eater' (DED 243), Tulu *alanku* 'pangolin'; the *sillu* and *salsalu*

possibly derive from the same word's Kodagu form (*cellavē* 'scaly ant-eater'). About the word *phatagen* *Brehm* mentions that it is the Sinhalese form. It cannot be in the same form having an aspirate, but it is of definite interest that Aelian (taking from Megasthenes) an animal called by the Indians *phattages*, which *McCrimble*, on the basis of the accurate description, takes to be the pangolin (*McCrimble*: Megasthenes 163). However, *Ball* (*op. cit.* 321) thinks that it is *Varanus* or *Hydrosaurus* — only on the ground of morphological evidence.

⁵² *M. Mayrhofer*: Kurzgefasstes Etymologisches Wörterbuch des Altindischen (EWA), I—III. Heidelberg 1956—1976. 598 f.

⁵³ *M. Monier-Williams*: A Sanskrit-English Dictionary, Etymologically and Philologically Arranged with Special Reference to the Cognate Indo-European Languages (SED). Oxford 1899, 1960³. 1289, 1291, 1299, 1330. Also: EWA III. 581. *R. L. Turner*: A Comparative Dictionary of the Indo-Aryan Languages (CDIAL), London 1962—1969. 13981 ff., 14110, 14114.

⁵⁴ *Brhat Hindī Koś* 1539: 'acche rangkā, pilā, sunahlā, sonekā banā hua, acchi jātikā'.

⁵⁵ *T. Burrow*: Dravidian Studies: VII. BSOAS 12 (1947) § 36, also *T. Burrow* — *M. B. Emeneau*: Dravidian Etymological Dictionary (DED) and Supplement (DEDS). Oxford 1961 and 1968. Here: DED 1183; DED 1210.

⁵⁶ SED 259—60.

⁵⁷ It is not easy to determine the original weight of a *karṣa*: 1 *māsa* ≈ 0,61 gr; 1 *karṣa* — 16 *māsa* — 9,8 gr. Often 8 *rattī* equivalent to 1 *māsa*, hence 1 *māsa* — 1 gr.

⁵⁸ Therefore 1 *kārsāpana* = *karṣa* when gold weighing is meant, but with *pana* it is equivalent in the case of copper. In such a case 1 *pana* = 80 *kaurī* (cf. *Manu* VIII, 136). There are many other systems current with different ratios.

⁵⁹ The second half of the compound, according to *Mayrhofer* (EWA II, 196), is a loanword from the Austro-Asiatic languages, and has nothing to do with *pana*.² < **pen* 'hand'. When scholiasts give a meaning 'a handful', they do not distinguish between the two *panas*.

⁶⁰ According to *Manu* VIII, 132—137: 1 *suvarṇa* = 16 *māsa* = 4 *suvarṇas* = 1 *niṣka* (equal in weight).

⁶¹ SED 562, EWA II, 169.

⁶² *Brhat Hindī Koś* 830.

⁶³ The only suggestion for an etymology is in SED 627: *pid*, but this root is highly uncertain and the form occurring in the RV (IV. 22, 8: *pipilē*) is not really significant from this point of view either (cf. EWA II, 291).

⁶⁴ DED XII, also *T. Burrow*: *Drav. Stud.* VI. 173 ff. in *Collected Papers*.

⁶⁵ *G. Komoróczy*: A tilmuni kereskedelem himnusza. (Egy betoldás az „Enki és Ninhursag” című szumer eposz szövegében). *AntTan* 18 (1971) 1—17; *idem*: „Das mythische Goldland Harali im Alten Vorderasien.” *Acta Orient. Hung.* 26 (1972) 113—123.

⁶⁶ *W. v. Soden*: *Akkadisches Handwörterbuch*. Unter Benutzung des Nachlasses von B. Meissner (1868—1947) bearb. von —. Wiesbaden. p. 555.